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might be convenient. The silver medal was voted to Mr. Lester for this invention by the society for the encouragement of Arts.

Observation. ..The machine of this kind which is placed in the repository of the society, has every appearance of being very well calculated for the purpose intended, both in its original design, and in the manner in which this is put into execution; which is done with that attention to strength, and durability, that is so desirable for implements, which must be submitted to the rough usage of labourers; there can be little doubt but that it would be found extremely serviceable, wherever large quantities of potatoes or other roots were to be washed; and would be particularly useful in places where cattle are fed with these kinds of vegetables

An Account of the Method of manufacturing Salt at Moutiers, in the department of Mont Blanc. By M. Berthier, Mine Engineer.

Continued from p. 299, No. XXVII.

In respect to the evaporation, it is necessary that the greatest possible proportion of water should be got rid of, relatively to the quantity of wood that is consumed; and the boilers are very far from being arranged in such a manner as to obtain this maximum of evaporation. They are very faulty, which is now perceived, and which it is intended to correct.

1°. The boilers are placed separate, and each of them has a very large fire-place. From this disposition, a great proportion of the heat that is developed is taken up to heat the masonry, and another portion is entirely lost, being taken off by the combustible vapours which the burning wood yields in large quantity, and which go off up the chimney in a very thick black smoke.

2°. The fire-place has a grate; all the small coals which are produced from the wood falls into the ash pit, and is consumed without yielding any benefit.

3°. So far from favouring the evaporation by a current of dry air sweeping all the surface of the liquid, all manner of circulation is rendered impossible from the enormous beams that almost touch it. The boiler is therefore as it were half shut up with a cover which stops the steam, condenses it, and opposes an obstacle to the evaporation.

4°. The great number of iron bars which rise up from the bottom of the boilers, to be fastened to the beams, are a very great hindrance to the work. The workmen who take away the schelot and the salt, cannot help leaving lumps in those corners where the peels cannot come. These lumps retain the heat, the salt calcines, and sticks to the bottom: this being unequally dilated, bends, splits, and lets the brine run out. The sediment continually increases, and from hence arises that thick crust of scales which must be knocked off the boiler at the expiration of a certain number of boilings.

In order to evaporate 30 or 40 met. cub. of brine, or 3600 or 4000 myriagrammes (scores) 50, 60, or even 70 steres of wood are consumed. The consumption of this fuel was formerly much less, because they used scarcely any thing but coals for the collection of the salt. It is not conceivable how a practice so very advantageous was left off. It must very soon be again taken up from necessity; but this will not happen till all the fine forests which the Tarentaise formerly possessed are entirely consumed, and the country, in other respects very poor, is reduced to the utmost distress.

The use of coals is dictated by the most urgent necessity. The salt works only possess wood enough for seven or eight years; if they are continued on the present establishment, there will remain at the end of that period no wood to mix with the coals, and a stop must be put to the works.

Nevertheless, there are numerous beds of coals in the neighbourhood of the establishment; and all the trials that have been made with this fuel have had very satisfactory results.

The coal found in the Tarentaise is dry, not bituminous; it incinerates with difficulty, burns with a very slight flame, does not cake together, and produces a very considerable heat. It is necessary to mix it with one-tenth part of wood in order to bring it to burn. It is adapted for the forge, and the neighbouring smiths make no complaint respecting it.

Mr. Roche, the director of the salt-works, who is more aware than any other person, how necessary it is to substitute some more common fuel instead of wood, has made several trials with this coal, which have showed that it may be used without any loss of time, and with great advantage in respect to expense.

The quantities of fuel consumed in these experiments have shown that to evaporate 1235 decigram. cub. of water, it required 4 steres of wood, or 559 myriagr. of coals. The trials were made in a boiler of plate-iron, whose capacity was 60 decimet. cub. and which was only half filled.

4 steres of wood, at 4 fr. 75 cent. each is fr.	19.0 cent.
569 myriagr. of coals, at 22 cent. each is	12.40
The profit is therefore . . .	6.60.

The following tables shew the composition of the several products of these salt-works.

Brine as it comes from the shed No. 1 and 2, marking 1°,6 by Baume's hydrometer.

Carbonate of lime (whiting) . .	0.000505
Sulphate of lime (gypsum) . .	0.002700
Sulphate of magnesia (Epsom salt)	0.000560
Sulphate of soda (Glauber's salt) .	0.001300
Muriate of soda (common salt) .	0.010600
Muriate of magnesia . .	0.000320
Oxyd of iron, some traces	
Total	0.015985

Sediments left by the brine in the troughs.

	Near the spring.		Near the sheds.
Red oxyd of iron	85.		5
Carbonates of lime	5.		93.
Suspended matters	4.	veg. subst.	2.
Water	6.		—
Total	100.		100.

Sediments left on the thorns.

	Shed No 1 and 2.	No. 3.	No. 4.
Carbonate of lime	6.60	0.00	0.00
Carbonate of iron	some traces	0.00	0.00
Muriate of soda	0.05	0.24	0.25
Sulphate of soda (lime)	93 35	99.76	99.75
Total	100.00	100.00	100.00

Graduated brine.	From the clearing cistern, at 18° 15.	From the boiling when saturated and at 26° hyd.
Sulphate of lime	0.0030	0.0000
Sulphate of magnesia	0.0080	0.0148
Sulphate of soda	0 0265	0.0281
Muriate of soda	0.1600	0.2550
Muriate of magnesia	0.0046	0.0107
	0.2021	0.3086

Schelot, or raking of the boilers.	First.	Second.	Last.
Sulphate of lime	28.00	41.10	10.10
Sulphate of soda	24.5	52.65	25.68
Muriate of soda	47.5	6.25	64.22
Magnesian salts,	some traces		
	100.	100.	100.

Salt made in the boilers.	First.	Second.	Last.
Sulphate of lime	1.58	0.00	0.00
Sulphate of magnesia	some traces	0.25	12.50
Sulphate of soda	3.80	5.55	0.00
Muriate of magnesia	some traces	0.61	2.00
Total impurity	5.36	6.41	14.50
Muriate of soda	94.64	93.59	85.50
Total	100.00	100.00	100.00

Salt made in the rope shed.	From the cistern.	From the ropes.
Sulphate of magnesia	0.40	0.58
Sulphate of soda	0.75	2.00
Muriate of magnesia	0.18	0.25
Total impurity	1.33	2.83
Muriate of soda	98.67	97.17
	100 00	100.00

Scales from the bottoms of the boilers,	as collected.	When crystallised.
Sulphate of lime	10.65	10.81
Sulphate of magnesia	3.00	4.61
Sulphate of soda	18.66	35.30
Muriate of magnesia	0.75	0.80
Muriate of soda	57.34	48.38
Water	9.60	0.10
Total	100.00	100.00

Mother water	Of muriate of soda.	Of sulphate of soda.
Sulphate of magnesia	0.0950	0.0420
Sulphate of soda	0.0000	0.0600
Muriate of magnesia	0.0485	0.0540
Muriate of soda	0.2080	0.1990
Total	0.3515	0.3550

Sediment of the mother water of muriate of soda.

	First.	Second.	Third.
Sulphate of magnesia	11.74	0.25	some traces.
Sulphate of soda	46 86	56.50	95.00
Muriate of magnesia	0.60	0.25	some traces.
Muriate of soda	41.30	43.00	5 00
Total	100.00	100.00	100.00

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